

CLAIMS

1. A method for estimating noise power, comprising:

averaging correlated values of known signal arranged in a
5 plurality of subcarrier waves;

calculating noise power per one subcarrier wave using the averaged
values of the correlated values of said known signal;

correcting calculation error of said noise power generated by
difference of channel variation between subcarrier waves for multiple
10 times based on said known signal;

cumulative-adding values of noise power per one subcarrier wave,
which are corrected in desired subcarrier wave band; and

averaging thereof by multiplying a predetermined value to the
value obtained by the cumulative-adding operation to estimate noise
15 power.

2. The method for estimating noise power according to claim 1, further
comprising:

correcting calculation error of said noise power per one
20 subcarrier wave generated by difference of channel variation between
subcarrier waves, using an average value of the correlated value of
said known signal in the subcarrier wave in question; and

further repeatedly correcting an error generated by said
correction.

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3. The method for estimating noise power according to claim 1, wherein
number of a plurality of employed adjacent subcarrier waves is variable

when the averaging operation for the correlated values of said known signal in a plurality of adjacent subcarrier waves is conducted.

4. The method for estimating noise power according to claim 3, further comprising:

measuring a level of spreading of the multipath based on the received signal;

determining a level of the correlation between adjacent subcarrier waves by the level of the measured spreading of the multipath,

10 wherein number of said employed plurality of adjacent subcarrier waves is increased when the correlation between adjacent subcarrier waves is high, and

wherein number of said employed plurality of adjacent subcarrier waves is decreased when the correlation between adjacent subcarrier waves is low.

5. The method for estimating noise power according to claim 1, further comprising:

estimating Doppler frequency based on the received signal,

20 wherein number of employed known signal arranged along the time orientation is increased when estimated Doppler frequency is low,

wherein number of employed known signal arranged along the time orientation is decreased when estimated Doppler frequency is high, and

25 wherein the value obtained by in-phase adding the correlated value of a plurality of known signals in each of subcarrier waves is employed as a correlated value of said known signal.

6. A noise power estimation apparatus, comprising:

a known signal-extracting means for extracting known signal from signal transmitted by using a plurality of subcarrier waves from a communication partner;

5 a first multiplying means for multiplying respective predetermined coefficients to correlated values of said known signal between a plurality of adjacent subcarrier waves;

a square means for calculating noise power per one subcarrier wave by squaring after adding said multiplying result;

10 a cumulative-adding means for cumulative-adding noise power per one subcarrier wave calculated by said square means for desired subcarrier waves; and

a second multiplying means for multiplying a predetermined value to the cumulative-added value calculated by said cumulative-adding means
15 to obtain an averaging value,

wherein said first multiplying means has a predetermined coefficient reflecting a result, which is obtained by correcting for multiple times a calculation error of noise power per one subcarrier wave generated by a difference in a channel variation between subcarrier
20 waves based on said known signal.